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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,607	09/30/2003	Stephen Y. Chou	13545-25	4191

1688 7590 10/31/2005

POLSTER, LIEDER, WOODRUFF & LUCCHESI  
12412 POWERS COURT DRIVE SUITE 200  
ST. LOUIS, MO 63131-3615

EXAMINER
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VARGOT, MATHIEU D

ART UNIT	PAPER NUMBER
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1732

DATE MAILED: 10/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/674,607	<b>Applicant(s)</b> CHOU ET AL.	
	<b>Examiner</b> Mathieu D. Vargot	<b>Art Unit</b> 1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 1-7 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

1.Applicant's election of Group II, claims 8-18 in the reply filed on August 25, 2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

2.The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Magnusson et al –300 (see Fig. 3C) as characterized by applicant at page 2, third paragraph of the instant specification in view of Chou –905 or Chou –905 in view of Magnusson et al -300.

As noted by applicant, Magnusson et al –300 discloses forming the instant subwavelength resonant grating filter by lithographic processing of a thin film, such normally employing a photoresist which is patterned as desired by irradiation, followed by a development of the patterned film using chemical or physical etching. Essentially, then, Magnusson et al –330, as characterized by applicant, lacks a showing of providing a molding surface with the desired projecting features which would be patterned and used to press against a moldable layer to produce a pattern of reduced thickness regions, which would then be etched and processed to form the waveguide. However, Chou –905 clearly teaches this processing in the formation of nanostructures in a thin film. See Figures 1A through 1D, showing the molding of pillars and areas of reduced

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thickness (24) on thin film (20) by mold (14,16), the areas of reduced thickness being removed by etching in preparation of the desired pattern on the thin film. Also, see Figure 8 concerning additional processing—ie, etching—which would be performed to arrive at the desired final patterning. As noted at column 1, lines 9-30, the imprint lithography taught in Chou –905 is intended to replace conventional thin film lithographic methods noted by applicant as taught in Magnusson et al –300. It is submitted prime facie obvious that one of ordinary skill in the art at the time of invention would have modified the conventional lithographic methods taught in Magnusson et al –300 with the imprint lithography shown in Chou –905 to provide a pattern with nanometer sized dimensions. On the other hand, it would have been obvious to employ the general method of Chou –905 and make a waveguide as shown in Magnusson et al –300 using the method of Chou –905 dependent on exact integrated optical device desired. Clearly, the instant grating is known and the instant imprint lithography to make similar optical devices is also known. Hence, the claims are submitted to have been obvious over these combined teachings. Chou –905 uses a mechanical press and it is submitted that pressurized fluid, electrostatic force and magnetic force are conventionally used in the art to press items together, including pressing mold members against moldable films and articles. Hence, instant claims 12-24 would have been obvious over the disclosure of Chou –905. Chou –905 (see col. 4, line 59) teaches a thin film thickness of 50-250 nm and (col. 4, lines 38-41) pillars, holes and trenches with a minimum feature size of 25 nm.


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3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mathieu D. Vargot whose telephone number is 571 272-1211. The examiner can normally be reached on Mon-Fri from 9 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaiani, can be reached on 571 272-1196. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

M. Vargot  
October 26, 2005

  
Mathieu D. Vargot  
Primary Examiner  
Art Unit 1732

10/26/05